



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,405	06/23/2003	Andrew Michael Duggan	MRKS/0110	7715

7590 11/01/2005

WILLIAM B. PATTERSON
MOSER, PATTERSON & SHERIDAN, L.L.P.
Suite 1500
3040 Post Oak Blvd.
Houston, TX 77056

EXAMINER

COLLINS, GIOVANNA M

ART UNIT PAPER NUMBER

3672

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/601,405	DUGGAN, ANDREW MICHAEL	
	Examiner	Art Unit	
	Giovanna M. Collins	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-83 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040618, 20031212</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 4-7,14,17,21,22,26,29,31-35,37,45-48,53,61,63-66,69 and 76-79.

Continuation of Disposition of Claims: Claims rejected are 1-3,8-13,15,16,18-20,23-25,27,28,30,36,38-44,49-52,54-60,62,67,68,70-75 and 80-83.

DETAILED ACTION

Election/Restrictions

1. Claims 14,17,21,22,45-48,53,61,63-65, and 76-79 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9/1/05.

Furthermore claims 4-7, 31-35, and 37 are also withdrawn as being drawn to non elected Species VII (second tubular with profiled end), there being no allowable generic or linking claim.

Claims 26,29,66,69 are also withdrawn as being dependent upon withdrawn claims 21, 63 and 65.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Bore-Lining Tubing and Method of Use.

Claim Objections

Claims 2, 10, and 72 are objected to because of the following informalities:

Claim 2 recites "a first tubular" in line 2 and "an expandable second tubular in line 3, it is unclear if these are the first and second tubulars recited in claim 1 which claim 2 is dependent upon. It appears in claim 2, the applicant intended to recite - - A method

Art Unit: 3672

as claimed in claim 1, further comprising the first tubing having a profiled portion describing an internal diameter; the expandable, second tubular having an external diameter less than the internal diameter of the first tubular; and locating the second tubular in the bore overlapping the profiled portion of the first tubular.- -

The same objection applies to claims 10.

Claim 72 recites the limitation "the first tubular profiled portion" in lines 1-2.

There is insufficient antecedent basis for this limitation in the claim as this limitation has not been previously recited.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1,3,8-13,15,18-20,23, 25,27,28,30,36,38,41, 43,49-51,54,57,70-72 are rejected under 35 U.S.C. 102(e) as being anticipated by Badrak et al. 6,648,075.

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Referring to claims 1,3,8,11,36, Badrak discloses (figs. 2-10) a method of lining a drilled bore, the method comprising the steps of: providing a first tubular (410), locating the first tubular in a bore; providing an expandable, second tubular (420), locating the second tubular in the bore overlapping the first tubular, expanding an upper end portion of the second tubular into contact with the first tubular to create a coupling (at 440) including a flow passage (at 450) between the first tubular and the second tubular and providing hanging support.

Referring to claim 9, Badrak disclose flowing fluid via the passage then sealing the second tubular to the first tubular (figs. 8-10).

Referring to claims 10,51 and 72, Badrak disclose the first tubular has profiled lower end (see fig. 6, below element 460).

Referring to claims 12 and 25, Badrak discloses circulating cement into an annulus between the second tubular and a wall of the bore and displacing fluid from the annulus via the flow passage. (fig. 8).

Referring to claims 13 and 27-28, Badrak discloses expanding the second tubular to a larger diameter (at the seal 460 which is below the slips) below the coupling (being located at the slips 440) whilst maintaining the flow passage open then sealing the second tubular to the first tubular to close the flow passage (fig. 9)

Referring to claims 15,19,20, Badrak discloses sealing the second tubular to the first tubular by expansion of the portion of the second tubular into the first tubular to close the flow passage (fig. 9).

Referring to claims 18 and 49, Badrak discloses a sealing member (460) between the two tubulars.

Referring to claims 23, Badrak discloses expanding the second tubular from the top down (fig. 7).

Referring to claims 30 and 38, Badrak discloses profiling at least part (see fig. 6, below element 460) of the first tubular prior to location of the second tubular in the bore.

Referring to claims 41, 50, 54, 71, Badrak discloses a bore lining tubing comprising providing a first tubular (410), an expandable, solid second tubular (420), a coupling (at 440) between an expanded portion of the second tubular and the first tubular including a flow passage (at 450) between the first tubular and the second tubular for flow of fluids.

Referring to claim 43, Badrak disclose the second tubular (420) is adapted to be expanded into contact with the first tubular.

Referring to claim 57, Badrak disclose the flow passage (at 450) extends axially with respect to the first tubular.

Referring to claim 70, Badrak discloses the flow passage (at 450) is provided between an inner wall of the first tubular and an outer wall of the second tubular.

Art Unit: 3672

5. Claims 1,3,8-12,15,18-20,23-25,30,36,38,41,43,49-51,54,57,70-72 are rejected under 35 U.S.C. 102(e) as being anticipated by Baugh et al. 6,446,724.

Referring to claims 1,3,8,11,36, Baugh discloses (figs. 5-12) a method of lining a drilled bore, the method comprising the steps of: providing a first tubular (36), locating the first tubular in a bore; providing an expandable, second tubular (28), locating the second tubular in the bore overlapping the first tubular, expanding an upper end portion of the second tubular into contact with the first tubular to create a coupling (at 42) including a flow passage (at 34) between the first tubular and the second tubular and providing hanging support.

Referring to claim 9, Baugh disclose flowing fluid via the passage then sealing the second tubular to the first tubular (col. 3, lines 7-22).

Referring to claims 10,51 and 72, Baugh disclose the first tubular has profiled lower end (see fig. 5, above element 28).

Referring to claims 12 and 25, Baugh discloses circulating cement into an annulus between the second tubular and a wall of the bore and displacing fluid from the annulus via the flow passage. (col. 3, lines 7-22).

Referring to claims 15,19,20, Baugh discloses sealing the second tubular to the first tubular by expansion of the portion of the second tubular into the first tubular to close the flow passage (fig. 11).

Referring to claims 18 and 49, Baugh discloses a sealing member between the two tubular (col. 3, lines 35-37).

Referring to claims 23-24, Baugh discloses expanding the second tubular from the top down (fig. 7) or from the bottom up (figs. 21 and 23).

Referring to claims 30 and 38, Baugh discloses profiling at least part (see fig. 5, above element 28) of the first tubular prior to location of the second tubular in the bore.

Referring to claims 41, 50 54, 71, Baugh discloses a bore lining tubing comprising providing a first tubular (36), an expandable, solid second tubular (28), a coupling (at 42) between an expanded portion of the second tubular and the first tubular including a flow passage (at 34) between the first tubular and the second tubular for flow of fluids.

Referring to claim 43, Baugh disclose the second tubular (28) is adapted to be expanded into contact with the first tubular.

Referring to claim 57, Baugh disclose the flow passage (at 34) extends axially with respect to the first tubular.

Referring to claim 70, Baugh discloses the flow passage (at 34) is provided between an inner wall of the first tubular and an outer wall of the second tubular.

6. Claims 1, 3, 8, 11, 12, 15, 18-20, 25, 36, 41, 43, 49, 50, 52, 54, 58, 70 and 71 are rejected under 35 U.S.C. 102(e) as being anticipated by Simpson et al. 6,598,678.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

Art Unit: 3672

the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Referring to claims 1,3,8,11,36, Simpson discloses (figs. 15-17) a method of lining a drilled bore, the method comprising the steps of: providing a first tubular (550), locating the first tubular in a bore; providing an expandable, second tubular (500), locating the second tubular in the bore overlapping the first tubular, expanding an upper end portion of the second tubular into contact with the first tubular to create a coupling (at 506) including a flow passage (at 504) between the first tubular and the second tubular and providing hanging support.

Referring to claim 9, Simpson disclose flowing fluid via the passage then sealing the second tubular to the first tubular (col. 10, lines 65-68).

Referring to claims 12 and 25, Simpson discloses circulating cement into an annulus between the second tubular and a wall of the bore and displacing fluid from the annulus via the flow passage. (col. 10, lines 49-38).

Referring to claims 15,19,20, Simpson discloses sealing the second tubular to the first tubular by expansion of the portion of the second tubular into the first tubular to close the flow passage (fig. 17).

Referring to claims 18 and 49, Simpson discloses a sealing member between the two tubular (at 508).

Referring to claims 41, 50,54, 71, Simpson discloses a bore lining tubing comprising providing a first tubular (550), an expandable, solid second tubular (500), a coupling (at 506) between an expanded portion of the second tubular and the first

tubular including a flow passage (at 504) between the first tubular and the second tubular for flow of fluids.

Referring to claim 43, Simpson disclose the second tubular (500) is adapted to be expanded into contact with the first tubular.

Referring to claim 52, Simpson discloses the second tubular (500) is adapted to be expanded at a level below the coupling.

Referring to claim 58, Simpson disclose the flow passage (at 504) extends helically with respect to the first tubular.

Referring to claim 70, Simpson discloses the flow passage (at 504) is provided between an inner wall of the first tubular and an outer wall of the second tubular.

7. Claims 71-74, 80 and 83 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent EP 0952306 to Lohbeck.

Referring to claims 71 and 83, Lohbeck discloses (fig. 1) a bore lining tubing (1) comprising a first tubular having a profiled portion (at 2), the first tubular adapted to receive an expandable, second tubular therein and to have an upper end portion of the second tubular expanded into contact with said profiled portion of the first tubular, to define at least one flow passage therebetween.

Referring to claim 72, Lohbeck disclose the first tubular (1) profiled portion comprising a profiled lower end portion (whole tubular profiled therefor lower end also profiled).

Referring to claim 73-74, Lohbeck discloses the first tubular (1) includes an inner wall, the inner wall having a plurality of channels (at 2-5) adapted to define the flow passages.

Referring to claim 80, Lohbeck discloses (fig. 1) a bore line tubing comprises a tubular (1) having a profiled portion defining at least one flow passage (2).

Referring to claim 83, Lohbeck discloses a bore lining tubing (1) comprising a first tubular having a profiled portion (at 2), the first tubular adapted to receive an expandable, second tubular therein and to have an upper end portion of the second tubular expanded into contact with said profiled portion of the first tubular, to define at least one flow passage therebetween.

8. Claims 71-72, and 75 are rejected under 35 U.S.C. 102(b) as being anticipated by British Patent GB2345308 to Metcalfe et al.

Referring to claim 71-72, Metcalfe discloses (fig. 11) a bore lining tubing comprising a first tubular (68) having a profiled portion (profile on casing above element 74), the first tubular lower end adapted to receive an expandable, second tubular therein and to have a portion of the second tubular expanded into contact the first tubular, to define at least one flow passage therebetween.

Referring to claim 75, Metcalfe discloses the profiled portion (above element 74) has a smaller internal diameter than the remainder (at 68) of the tubular.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2,16,30,39,42,44,62,81 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baugh '734 in view of British Patent GB2345308 to Metcalfe et al.

Referring to claims 2,30, and 42, Baugh discloses the method of claim 1 and the apparatus of claim 41 but does not disclose the first tubular having a internal profiled portion such that the second tubular can overlap the profiled portion. Metcalfe teaches a first tubular (12) having a profiled portion (at 10 and 17) and an second expandable tubular (14) in the first tubular, and having the second tubular overlap the profiled portion of the first tubular and expanded the second tubular into contact with a first tubular (figs.1-2) . Metcalfe teaches having the second tubular overlap a profiled portion helps to provide hanging support and a pressure tight sealing between the liner and the casing (see page 15, lines 11-16). As it would be advantageous to have hanging support and a pressure tight sealing between the liner and the casing, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the first tubular disclosed by Baugh to have a profiled section as taught by Metcalfe.

Referring to claim 16, Baugh, as modified discloses expanding part of the second tubular ((28) above a profiled section into sealing contact with a wall of the first tubular to close the flow passage (fig. 11).

Referring to claim 30, Metcalfe teaches profiling at least part of a first tubular prior to location of a second tubular (page 4, line 27-page 5, line 3).

Referring to claim 39, Metcalfe teaches at least partly expanding a portion of a first tubular (page 5, lines 4-5).

Referring to claim 40, Metcalfe teaches at least one flute (17) in a first tubular.

Referring to claim 44, Metcalfe teaches an upper end of a second tubular (14) is expanded into contact with a profiled portion (10,17) of a first tubular (12).

Referring to claim 62, Baugh does not disclose a profiled section has a smaller diameter than the remainder of the first tubular. Metcalfe teaches (see figs. 11-12) a profiled section (above element 74) that has an internal diameter smaller than an internal diameter of the remaining tubular (at 68). The smaller diameter helps to hang the second tubular in the first tubular. As it would be advantageous to help hang the second tubular in the first tubular, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the first tubular disclosed by Baugh to have internal diameter of the profiled portion smaller than an internal diameter of the remaining tubular as taught by Metcalfe.

Referring to claim 81, Baugh disclose a method of lining a bore comprising locating a first tubular(36) in a bore locating an expandable second tubular (28) in the first tubular overlapping a portion of the first tubing, expanding (fig. 7) an upper end

Art Unit: 3672

portion of the second tubular into contact with the first tubular to create a coupling (at 42) including a flow passage (at 34) flowing fluid through the flow passage then sealing the second tubular to the first tubular (col. 3, lines 25-38). Baugh does not disclose the first tubular having a profiled portion and having the second tubular overlap the profiled portion. Metcalfe teaches a first tubular (12) having a profiled portion (at 10 and 17) and an second expandable tubular (14) in the first tubular, and locating the second tubular overlapping the profiled portion of the first tubular and expanding an upper end of the second tubular into contact with the profiled portion of the first tubular (figs.1-2) .

Metcalfe teaches having the second tubular overlap a profiled portion helps to provide hanging support and a pressure tight sealing between the liner and the casing (see page 15, lines 11-16). As it would be advantageous to have hanging support and a pressure tight sealing between the liner and the casing, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the first tubular disclosed by Baugh to have a profiled section as taught by Metcalfe.

Referring to claim 82, Baugh discloses a bore lining tubular comprising a first tubular (36), said first tubular located in a bore, an expandable, second tubular (28) extending from the first tubular; and a coupling (at 42) formed between an upper end portion of the second tubular expanded into contact the first tubular, said coupling including at least one flow passage (at 34) between the first tubular and the second tubular for the flow of fluid via said passage. Baugh does not disclose the first tubular having a profiled portion and having the second tubular overlap the profiled portion. Metcalfe teaches a first tubular (12) having a profiled portion (at 10 and 17) and an

Art Unit: 3672

second expandable tubular (14) in the first tubular, and locating the second tubular overlapping the profiled portion of the first tubular and expanding an upper end of the second tubular into contact with the profiled portion of the first tubular (figs.1-2) .

Metcalf teaches having the second tubular overlap a profiled portion helps to provide hanging support and a pressure tight sealing between the liner and the casing (see page 15, lines 11-16). As it would be advantageous to have hanging support and a pressure tight sealing between the liner and the casing, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the first tubular disclosed by Baugh to have a profiled section as taught by Metcalfe.

10. Claims 30,40,55-56,59,60 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baugh '734 in view of Lohbeck '306.

Referring to claims 30, Baugh discloses the method of claim 1 but does not disclose the first tubular having a profiled portion. Lohbeck teaches a first tubular (1) with an profiled portion (at 2-5) throughout the entire tubular. Lohbeck teaches the profiled portion allows the tubular to be folded to aid installation (col. 4, paragraph 0022). As it would be advantageous to help in installing the first tubular into the wellbore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the first tubular disclosed by Baugh to have the profiled portion as taught by Lohbeck.

Referring to claim 40, Lohbeck teaches forming at least one flute (at 2-5) in the first tubular.

Referring to claims 55-56 and 67, Baugh discloses the apparatus of claim 41 but does not disclose the first tubular having channels. Lohbeck teaches a plurality of channels (2-5) defining at least part of a separate flow passage. Lohbeck teaches the channels allow the tubular to be folded to aid installation (col. 4, paragraph 0022). As it would be advantageous to help in installing the first tubular into the wellbore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the first tubular disclosed by Baugh to have the profiled portion as taught by Lohbeck.

Referring to claims 59, Lohbeck discloses at least part of an inner wall (at 2-5) of the first tubular defines an open sided channel (2-5).

Referring to claim 60, Lohbeck teaches the opensided channel (at 2-5) with a second tubular defines a flow passage.

11. Claims 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baugh '734 in view of British Patent GB2345308 to Metcalfe et al. as applied to claim 62 and further in view of Lohbeck '306.

Baugh as modified disclose the apparatus of claim 62 but does not disclose the profiled section has an channel. Lohbeck teaches a plurality of channels (2-5) defining at least part of a separate flow passage. Lohbeck teaches the channels allow the tubular to be folded to aid installation (col. 4, paragraph 0022). As it would be advantageous to help in installing the first tubular into the wellbore, it would be obvious to one of ordinary skill in the art at the time of the invention to further modify the first tubular disclosed by Baugh to have the profiled portion as taught by Lohbeck.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 571-272-7027. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


gmc


David Bagnell
Supervisory Patent Examiner
Technology Center 3670